

CS

1. A carbon material comprising a first carbon material serving as a core material, and a second carbon material coating the first carbon material over the surface thereof, the second carbon material containing boron.
2. A carbon material according to claim 1 wherein the first carbon material contains no boron.
3. A carbon material according to claim 1 wherein the first carbon material is at least 3.35 Å to not greater than 3.38 Å in the spacing  $d_{002}$  between (002) planes thereof and is at least 300 Å in the size  $L_c$  of crystallites in the direction of c-axis thereof as determined by the X-ray wide-angle diffraction method.
4. A carbon material according to claim 1 wherein the first carbon material is at least 3.35 Å to not greater than 3.36 Å in the spacing  $d_{002}$  between (002) planes thereof and is at least 1000 Å in the size  $L_c$  of crystallites in the direction of c-axis thereof as determined by the X-ray wide-angle diffraction method.
5. A carbon material according to claim 1 wherein the second carbon material is at least 3.37 Å to not greater than 3.90 Å in the spacing  $d_{002}$  between (002) planes thereof as

6. A carbon material according to claim 1 wherein the second carbon material contains at least 1 wt. % to up to 15 wt. % of boron.

8. A carbon material according to claim 1 wherein the amount of the second carbon material is at least 1 wt. % to up to 20 wt. % based on the combined amount of the first carbon material and the second carbon material.

10. A carbon material according to claim 1 wherein the second carbon material contains at least 0.01 wt. % to up to 3 wt. % of boron based on the combined amount of the first carbon material and the second carbon material.

11. A carbon material according to claim 1 wherein the second carbon material contains at least 0.25 wt. % to up to 1 wt. % of boron based on the combined amount of the first

carbon material and the second carbon material.

12. A carbon material comprising a first carbon material serving as a core material, and a second carbon material coating the first carbon material over the surface thereof, the second carbon material containing boron and nitrogen.

13. A carbon material according to claim 12 wherein the first carbon material contains no boron and no nitrogen.

14. A carbon material according to claim 12 wherein the first carbon material is at least 3.35 Å to not greater than 3.38 Å in the spacing  $d_{002}$  between (002) planes thereof and is at least 300 Å in the size  $L_c$  of crystallites in the direction of c-axis thereof as determined by the X-ray wide-angle diffraction method.

15. A carbon material according to claim 12 wherein the first carbon material is at least 3.35 Å to not greater than 3.36 Å in the spacing  $d_{002}$  between (002) planes thereof and is at least 1000 Å in the size  $L_c$  of crystallites in the direction of c-axis thereof as determined by the X-ray wide-angle diffraction method.

16. A carbon material according to claim 12 wherein the second carbon material is at least 3.37 Å to not greater than 3.90 Å in the spacing  $d_{002}$  between (002) planes thereof as

17. A carbon material according to claim 12 wherein the second carbon material contains at least 1 wt. % to up to 15 wt. % of boron.

19. A carbon material according to claim 12 wherein the second carbon material contains at least 1 wt. % to up to 10 wt. % of nitrogen.

20. A carbon material according to claim 12 wherein the second carbon material contains at least 3 wt. % to up to 5 wt. % of nitrogen.

21. A carbon material according to claim 12 wherein the amount of the second carbon material is at least 1 wt. % to up to 20 wt. % based on the combined amount of the first carbon material and the second carbon material.

22. A carbon material according to claim 12 wherein the amount of the second carbon material is at least 5 wt. % to up to 15 wt. % based on the combined amount of the first carbon material and the second carbon material.

23. A carbon material according to claim 12 wherein the

second carbon material contains at least 0.01 wt. % to up to 3 wt. % of boron based on the combined amount of the first carbon material and the second carbon material.

24. A carbon material according to claim 12 wherein the second carbon material contains at least 0.25 wt. % to up to 1.5 wt. % of boron based on the combined amount of the first carbon material and the second carbon material.

25. A carbon material according to claim 12 wherein the second carbon material contains at least 0.01 wt. % to up to 2 wt. % of nitrogen based on the combined amount of the first carbon material and the second carbon material.

26. A carbon material according to claim 12 wherein the second carbon material contains at least 0.15 wt. % to up to 0.75 wt. % of nitrogen based on the combined amount of the first carbon material and the second carbon material.

27. An electrode comprising a carbon material used as an active substance, the carbon material comprising a first carbon material serving as a core material, and a second carbon material coating the first carbon material over the surface thereof, the second carbon material containing boron.

28. An electrode according to claim 27 wherein the first carbon material contains no boron.

29. An electrode according to claim 27 wherein the first carbon material is at least 3.35 Å to not greater than 3.38 Å in the spacing  $d_{002}$  between (002) planes thereof and is at least 300 Å in the size  $L_c$  of crystallites in the direction of c-axis thereof as determined by the X-ray wide-angle diffraction method.

30. An electrode according to claim 27 wherein the first carbon material is at least 3.35 Å to not greater than 3.36 Å in the spacing  $d_{002}$  between (002) planes thereof and is at least 1000 Å in the size  $L_c$  of crystallites in the direction of c-axis thereof as determined by the X-ray wide-angle diffraction method.

31. An electrode according to claim 27 wherein the second carbon material is at least 3.37 Å to not greater than 3.90 Å in the spacing  $d_{002}$  between (002) planes thereof as determined by the X-ray wide-angle diffraction method.

32. An electrode according to claim 27 wherein the second carbon material contains at least 1 wt. % to up to 15 wt. % of boron.

33. An electrode according to claim 27 wherein the second carbon material contains at least 5 wt. % to up to 10 wt. % of boron.

34. An electrode according to claim 27 wherein the amount of the second carbon material is at least 1 wt. % to up to 20 wt. % based on the combined amount of the first carbon material and the second carbon material.

35. An electrode according to claim 27 wherein the amount of the second carbon material is at least 5 wt. % to up to 10 wt. % based on the combined amount of the first carbon material and the second carbon material.

36. An electrode according to claim 27 wherein the second carbon material contains at least 0.01 wt. % to up to 3 wt. % of boron based on the combined amount of the first carbon material and the second carbon material.

37. An electrode according to claim 27 wherein the second carbon material contains at least 0.25 wt. % to up to 1 wt. % of boron based on the combined amount of the first carbon material and the second carbon material.

38. An electrode comprising a carbon material used as an active substance, the carbon material comprising a first carbon material serving as a core material, and a second carbon material coating the first carbon material over the surface thereof, the second carbon material containing boron and nitrogen.

44. An electrode according to claim 38 wherein the



second carbon material contains at least 5 wt. % to up to 10 wt. % of boron.

45. An electrode according to claim 38 wherein the second carbon material contains at least 1 wt. % to up to 10 wt. % of nitrogen.

46. An electrode according to claim 38 wherein the second carbon material contains at least 3 wt. % to up to 5 wt. % of nitrogen.

47. An electrode according to claim 38 wherein the amount of the second carbon material is at least 1 wt. % to up to 20 wt. % based on the combined amount of the first carbon material and the second carbon material.

48. An electrode according to claim 38 wherein the amount of the second carbon material is at least 5 wt. % to up to 15 wt. % based on the combined amount of the first carbon material and the second carbon material.

49. An electrode according to claim 38 wherein the second carbon material contains at least 0.01 wt. % to up to 3 wt. % of boron based on the combined amount of the first carbon material and the second carbon material.

50. An electrode according to claim 38 wherein the second carbon material contains at least 0.25 wt. % to up to

005250-1-05300

51. An electrode according to claim 38 wherein the second carbon material contains 0.01 wt. % to up to 2 wt. % of nitrogen based on the combined amount of the first carbon material and the second carbon material.

53. A nonaqueous electrolyte secondary cell comprising a negative electrode incorporating a carbon material therein as an active substance, the carbon material comprising a first carbon material serving as a core material, and a second carbon material coating the first carbon material over the surface thereof, the second carbon material containing boron.

55. A nonaqueous electrolyte secondary cell according to claim 53 wherein the first carbon material is at least 3.35 Å to not greater than 3.38 Å in the spacing  $d_{002}$  between (002) planes thereof and is at least 300 Å in the size  $L_c$  of

crystallites in the direction of c-axis thereof as determined by the X-ray wide-angle diffraction method.

56. A nonaqueous electrolyte secondary cell according to claim 53 wherein the first carbon material is at least 3.35 Å to not greater than 3.36 Å in the spacing  $d_{002}$  between (002) planes thereof and is at least 1000 Å in the size  $L_c$  of crystallites in the direction of c-axis thereof as determined by the X-ray wide-angle diffraction method.

57. A nonaqueous electrolyte secondary cell according to claim 53 wherein the second carbon material is at least 3.37 Å to not greater than 3.90 Å in the spacing  $d_{002}$  between (002) planes thereof as determined by the X-ray wide-angle diffraction method.

58. A nonaqueous electrolyte secondary cell according to claim 53 wherein the second carbon material contains at least 1 wt. % to up to 15 wt. % of boron.

59. A nonaqueous electrolyte secondary cell according to claim 53 wherein the second carbon material contains at least 5 wt. % to up to 10 wt. % of boron.

60. A nonaqueous electrolyte secondary cell according to claim 53 wherein the amount of the second carbon material is at least 1 wt. % to up to 20 wt. % based on the combined

amount of the first carbon material and the second carbon material.

61. A nonaqueous electrolyte secondary cell according to claim 53 wherein the amount of the second carbon material is at least 5 wt. % to up to 10 wt. % based on the combined amount of the first carbon material and the second carbon material.

62. A nonaqueous electrolyte secondary cell according to claim 53 wherein the second carbon material contains at least 0.01 wt. % to up to 3 wt. % of boron based on the combined amount of the first carbon material and the second carbon material.

63. A nonaqueous electrolyte secondary cell according to claim 53 wherein the second carbon material contains at least 0.25 wt. % to up to 1 wt. % of boron based on the combined amount of the first carbon material and the second carbon material.

64. A nonaqueous electrolyte secondary cell according to claim 53 which comprises a positive electrode consisting mainly of a lithium-containing metal oxide.

65. A nonaqueous electrolyte secondary cell comprising a negative electrode incorporating a carbon material therein as

an active substance, the carbon material comprising a first carbon material serving as a core material, and a second carbon material coating the first carbon material over the surface thereof, the second carbon material containing boron and nitrogen.

66. A nonaqueous electrolyte secondary cell according to claim 65 wherein the first carbon material contains no boron and no nitrogen.

67. A nonaqueous electrolyte secondary cell according to claim 65 wherein the first carbon material is at least 3.35 Å to not greater than 3.38 Å in the spacing  $d_{002}$  between (002) planes thereof and is at least 300 Å in the size  $L_c$  of crystallites in the direction of c-axis thereof as determined by the X-ray wide-angle diffraction method.

68. A nonaqueous electrolyte secondary cell according to claim 65 wherein the first carbon material is at least 3.35 Å to not greater than 3.36 Å in the spacing  $d_{002}$  between (002) planes thereof and is at least 1000 Å in the size  $L_c$  of crystallites in the direction of c-axis thereof as determined by the X-ray wide-angle diffraction method.

69. A nonaqueous electrolyte secondary cell according to claim 65 wherein the second carbon material is at least 3.37

A to not greater than 3.90 Å in the spacing  $d_{002}$  between (002) planes thereof as determined by the X-ray wide-angle diffraction method.

70. A nonaqueous electrolyte secondary cell according to claim 65 wherein the second carbon material contains at least 1 wt. % to up to 15 wt. % of boron.

71. A nonaqueous electrolyte secondary cell according to claim 65 wherein the second carbon material contains at least 5 wt. % to up to 10 wt. % of boron.

72. A nonaqueous electrolyte secondary cell according to claim 65 wherein the second carbon material contains at least 1 wt. % to up to 10 wt. % of nitrogen.

73. A nonaqueous electrolyte secondary cell according to claim 65 wherein the second carbon material contains at least 3 wt. % to up to 5 wt. % of nitrogen.

74. A nonaqueous electrolyte secondary cell according to claim 65 wherein the amount of the second carbon material is at least 1 wt. % to up to 20 wt. % based on the combined amount of the first carbon material and the second carbon material.

75. A nonaqueous electrolyte secondary cell according to claim 65 wherein the amount of the second carbon material is

76. A nonaqueous electrolyte secondary cell according to claim 65 wherein the second carbon material contains at least 0.01 wt. % to up to 3 wt. % of boron based on the combined amount of the first carbon material and the second carbon material.

78. A nonaqueous electrolyte secondary cell according to claim 65 wherein the second carbon material contains at least 0.01 wt. % to up to 2 wt. % of nitrogen based on the combined amount of the first carbon material and the second carbon material.

79. A nonaqueous electrolyte secondary cell according to claim 65 wherein the second carbon material contains at least 0.15 wt. % to up to 0.75 wt. % of nitrogen based on the combined amount of the first carbon material and the second

ial.  
onaqueou  
ch comp  
lithium-

~~CONFIDENTIAL~~

[illegible]